MONITORING OF SUPPLEMENTATION RESPONSE VARIABLES FOR YKFP 9506406

SHORT DESCRIPTION:
Lead the development of detailed monitoring plans stating major objectives, experimental hypotheses, risk containment measures, and specific field protocols for the Yakima/Klickitat Fisheries Project (YKFP). Provide power analyses for the experimental design; implement monitoring and evaluation of the reproduction success and long term fitness response variables.

SPONSOR/CONTRACTOR: WDFW
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SUB-CONTRACTORS:
N/A

GOALS

GENERAL:
Supports a healthy Columbia basin, Maintains biological diversity, Maintains genetic integrity, Adaptive management (research or M&E)

ANADROMOUS FISH:
Research, M&E

NPPC PROGRAM MEASURE:
7.4K.1

TARGET STOCK	LIFE STAGE	MGMT CODE (see below)
Upper Yakima spring chinook	Juvenile and adult freshwater phasess	S, N. W
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AFFECTED STOCK	BENEFIT OR DETRIMENT
Resident and anadromous species within the Yakima basin	To be determined by monitoring and evaluation of the YKFP

BACKGROUND

Stream name:
Yakima River

Subbasin:
Yakima

HISTORY:
This task is one of an integrated suite of tasks which, collectively, implement the YKFP. This task will be initiated in 1997 to support development and implementation of the YKFP monitoring plan.

BIOLOGICAL RESULTS ACHIEVED:
N/A

PROJECT REPORTS AND PAPERS:
The YKFP Monitoring Implementation Plan is in draft form as of February, 1997.

ADAPTIVE MANAGEMENT IMPLICATIONS:
Under the adaptive management structure for the YKFP, project managers propose actions (strategies) in response to a set of agreed-upon objectives. These actions are designed as experiments to test whether the predicted results (or some other result) occurs. They also define operating assumptions needed to accept the strategies, associated uncertainties, and the risk of not meeting the stated objectives if the assumptions are incorrect or the strategy is not feasible. The experiments must be carefully

designed to obtain valid (i.e. statistically reliable) results in a specified period of time. The experiments are conducted and carefully monitored to allow statistical evaluation of the results. The process includes a mechanism for review of the previous year's results, which may cause the objective to be modified, in turn restarting the process.

PURPOSE AND METHODS

SPECIFIC MEASUREABLE OBJECTIVES:
Perform cyclic revision of the YKFP Monitoring Implementation Plan. Perform power analyses to support experimental design work. Conduct monitoring and evaluation of long term fitness and reproductive success following implementation of the YKFP.

CRITICAL UNCERTAINTIES:
Under development by the YKFP Monitoring Implementation Planning Team

BIOLOGICAL NEED:
Implementation of the Monitoring and Evaluation plan. A detailed Monitoring and Evaluation Plan is now under development by the YKFP Monitoring Implementation Planning Team (MIPT). After completion in 1997, it will guide specific M & E tasks on an annual basis.

HYPOTHESIS TO BE TESTED:
Under development by the YKFP Monitoring Implementation Planning Team

ALTERNATIVE APPROACHES:
Alternative approaches to achieve the NPCC objectives for the YKFP were presented in the draft EIS. The task described herein supports the preferred alternative as presented in the Yakima Fisheries Project Record of Decision, March, 1996.

JUSTIFICATION FOR PLANNING:
This task responds to the NPPC comments on the YKFP Master Plan instructing the state and the tribal managers to establish a project management structure. This task guides implementation the YKFP monitoring plan in addition to conducting a portion of the on-the-ground work.

METHODS:
Under development by the YKFP Monitoring Implementation Planning Team

PLANNED ACTIVITIES

SCHEDULE:

Planning Phase **Start** 1997 **End** 2005 **Subcontractor**

Task Monitoring will begin no later than the scheduled initiation of brood stock collection in April, 1997. The YKFP Monitoring Implementation Planning Team is developing a detailed monitoring plan based on pre-facility baseline work in genetics, reproductive success, species interactions and post-release survival.

Implementation Phase **Start** 1997 **End** 2005 **Subcontractor**

Task Monitor the post-supplementation progress of long-term fitness and reproductive success of supplemented hatchery and naturally spawning upper Yakima spring chinook

PROJECT COMPLETION DATE:
2005

CONSTRAINTS OR FACTORS THAT MAY CAUSE SCHEDULE OR BUDGET CHANGES:
Risk monitoring and containment measures will be developed by the YKFP Monitoring and Evaluation Work Group based on risk

s identified in the final EIS via the adaptive management process used by the YKFP.

OUTCOMES, MONITORING AND EVALUATION

SUMMARY OF EXPECTED OUTCOMES

Expected performance of target population or quality change in land area affected:
Under development by the YKDP Monitoring Implementation Planning Team

Assessment of effects on project outcomes of critical uncertainty:
Critical uncertainties are classified in the Project Status Report, Vol. 3; Upper Yakima Spring Chinook as resolvable or unresolvable. Resolvable uncertainties will be approached through experimentation, monitoring, and evaluation. The effect of unresolvable uncertainties will be detected through monitoring according to the YKFP Monitoring Implementation Plan.

Information products:
Monitoring implementation hypotheses and protocols to assess the result of supplementation on target and non-target taxa; power analyses and statistical support for experimental design; evaluation of the effects of hatchery supplementation on the genetic status and reproductive success of upper Yakima spring chinook.

Coordination outcomes:
The YKFP and each supporting task including that described herein is designed to provide transferable primary information for use in supplementation projects throughout the Col. R. basin.

MONITORING APPROACH

Under development by the YKFP Monitoring Implementation Planning Team

Provisions to monitor population status or habitat quality:
The YKFP is designed as an experiment. The Monitoring Implementation Planning Team (MIPT) provides a detailed monitoring plan, including specific field protocols to monitor numerous response variables, including stoci status, genetic change, reproductive success, natural production, and ecological interactions.

Data analysis and evaluation:
The project management structure provides for a Scientific and Technical Advisory Committee (STAC). Specific projects, including that described herein, report results to the STAC which will incorporate information into the YKFP adaptive management framework.

Information feed back to management decisions:
Through the YKFP adaptive management process as described in detail in the FEIS and the PSR.

Critical uncertainties affecting project's outcomes:
Achieve habitat stability/improvement in the Yakima basin. Provide more favorable water quality and flows in the Yakima basin.

EVALUATION

Achieve improvement in the status of upper Yakima spring chinook. Transfer genetic and reproductive success monitoring techniques to other users. Achieve no negative impacts to genetic health or reproductive capacity of upper Yakima spring chinook.

Incorporating new information regarding uncertainties:
Through the adaptive management process incorporated by the project.

Increasing public awareness of F&W activities:

The YKFP incorporates a Project Annual Review (PAR) which offers the opportunity for peer review to assess the effectiveness of various tasks in achieving overall project objectives. In addition, project scientists publish results in peer-reviewed scientific jourls and BPA contract reports.

RELATIONSHIPS

RELATED BPA PROJECT	RELATIONSHIP
9506403 Development of the Genetic Management Framework for Upper Yakima spring Chinook 9506404 - Policy/Technical Involvement and planning in the Yakima/Klickitat Fisheries Project 9506405 - Further Development of the NIT and LNIT Strategie	Provides the genetic management component, a complement to the ecological interactions component described above. Both are central to Project objectives as defined by the NPPC. Evaluation of project objectives and success is dependent upon this assumption.Provides for WDFW policy and technical planning and coordination.Provides field testing and final definition of the new innovative treatments to be ussed for fish rearing to produce individuals with traits similar to their wild counterparts. Evaluation of project objectives and success is dependent upon this assumption.
9506402 Upper Yakima Species Interactions Studies	Established the biological baseline for spawning, rearing, and production of rainbow trout, steelhead, spring chinook salmon, and non-target species that may be important effectors or respond to supplementation. This task also develops monitoring techniques and specific monitoring plans that must be in place at the inception of YKFP supplementation and continue as the system responds. Evaluation of project objectives and success is dependent upon this assumption.
9506401 Refinement of Marking Methods for the Yakima/Klickitat Fisheries Project	Is developing the marking technology necessary to identify project fish at the treatment replicate level and recover information about those fish by benign sampling. Evaluation of project success is dependent upon this assumption.
9506400 The Intergovernmental Agreement Yakima Fisheries Project Scientific and Management Services	Provides the contract for WDFW policy oversight and technical direction for this and other priority tasks within the adaptive management framework of the Yakima/Klickitat Fisheries Project.

OPPORTUNITIES FOR COOPERATION:

The cooperating fishery managers on the YKFP are the Yakama Indian Nation and the Washington Department of Fish and Wildlife. A project management framework stipulates that project management is directed by a Policy Group consisting of representatives of the fishery managers. The USBOR is an interested party in the basin and several proposed monitoring facilities are operated by BOR. BPA is the funding entity and has the lead responsibility for NEPA development and compliance.

COSTS AND FTE

1997 Planned: $0

1997 Planned: $136,000

FUTURE FUNDING NEEDS:

FY	$ NEED	% PLAN	% IMPLEMENT	% O AND M
1998	$200,000	40%	60%	
1999	$200,000	20%	80%	
2000	$200,000	20%	80%	
2001	$200,000	20%	80%	
2002	$200,000	80%	20%	

PAST OBLIGATIONS (incl. 1997 if done):

OTHER NON-FINANCIAL SUPPORTERS:
N/A

LONGER TERM COSTS: Approximataely $200k through 2005 Implementation

1997 OVERHEAD PERCENT: 19%

HOW DOES PERCENTAGE APPLY TO DIRECT COSTS:
Total of direct costs except capitalized equipment and fish food

CONTRACTOR FTE: 19%

SUBCONTRACTOR FTE: 1.3